What is Claimed is:

1. A transmitting apparatus for transmitting a source packet constructed of a pair of data of a source packet data and a source packet header including a time stamp, comprising:

transmission packet generating means of investigating values of a predetermined portion of said time stamp included in said source packet when said source packet is inputted, unifying said source packets that have a same value for said predetermined portion and are inputted in series to output as one unit of transmission packet data; and

data outputting means of producing a transmission packet by adding predetermined additional information to said outputted transmission packet data and outputting said produced transmission packet outward.

2. The transmitting apparatus according to claim 1, wherein said transmission packet generating means outputs (N-1) units of dummy transmission packet data to said data outputting means,

in the case where difference between values of said predetermined portions of said time stamps included in two source packets inputted in series is N being $N \geq 2$.

3. A transmitting apparatus for transmitting a source packet constructed of a pair of data of the source packet data and a source packet header including a time stamp, comprising:

split number designating means of designating a split number M ($M \geq 1$) to split said source packet;

transmission packet generating means of investigating values of a predetermined portion of said time stamp included in said source packet when said source packet is inputted,

outputting said M units split from said source packet as transmission packet data when difference between values of predetermined portions of said time stamp included in said two source packets in series is N ($N \geq 0$) being $N \leq L$ ($L \geq 1$), and

outputting (N-L) units of dummy transmission packet data when difference between values of said predetermined portions of said time stamp is N being $N > L$; and

data outputting means of outputting as transmission packet outward those being said outputted transmission packet data and/or said dummy transmission packet data to which a predetermined additional information is added.

4. The transmitting apparatus according to claim 3, wherein said M is 2, 4 or 8.

5. The transmitting apparatus according to any of claims 1 to 4, wherein K units of said source packets having variable length or fixed length with $K \geq 1$ are inputted as a group to said transmission packet generating means.

6. The transmitting apparatus according to any of claims 1 to 5,

wherein said predetermined additional information is a CIP header, an isochronous header, a header CRC and a data CRC,

said data outputting means has: a CIP header adding means of adding said predetermined CIP header to said outputted transmission packet data; and

an IEEE1394 interface for producing said transmission packet by further adding said isochronous header, said header CRC and said data CRC to the transmission packet data to which said predetermined CIP header is added and outputting said produced transmission packet outward.

7. The transmitting apparatus according to claim 6, wherein data of said source packet are a transport stream packet of MPEG.

8. The transmitting apparatus according to claim 7, wherein said time stamp is expressed with Cycle_Count and Cycle_Offset of CycleTimeRegister of IEEE1394 standards, and

said predetermined portion is a portion of said Cycle_Count.

9. A packet mode determining method,

wherein upon receipt of a source packet constructed of a pair of data of the source packet data and a source packet header including a time stamp,

FALSE is substituted for a flag F expressed by TRUE or FALSE, and at the same time, difference N between a value of said time stamp included in said source packet received immediately prior thereto and a value of the time stamp included in said source packet received this time is calculated;

in the case where N=0 is given, and the flag F expressed by TRUE or FALSE gives F=TRUE, and a first buffer expressed by a pair of two units of numeric values being (X1, Y1) fulfills X1=1 and Y1>1, after Y1 is replaced with (Y1-1), (X1, Y1) being contents of said first buffer is added to a packet mode list, and moreover X1=2, Y1=1 are substituted for said first buffer;

in the case where N=0 is given, and said flag F is F=TRUE, and the first buffer expressed by a pair of two units of numeric values being (X1, Y1) is $X1 \neq 1$ and/or $Y1 \leq 1$, X1 is replaced with (X1+1);

in the case where N=0 is given, and said flag F is F=TRUE, X1 of the first buffer expressed by a pair of two units of numeric values being (X1, Y1) is replaced with (X1+1);

in the case where N=1, and said flag F is F=FALSE and $X2 \leq 1$, 1 is substituted for X1 and Y1 is replaced with (Y1+1);

in the case where N=1, and said flag F is F=FALSE and X2>1, said flag F is made to constitute F=TRUE and, at the

same time, 1 is substituted for X2 and Y2 is replaced with 1;

in the case where N=1, and said flag F is F=TRUE and X2=0, Y1 is replaced with (Y1+1) and, at the same time, 1 is substituted for X2;

in the case where N=1, and said flag F is F=TRUE and X2>0 and X1=X2, Y1 is replaced with (Y1+1) and, at the same time, 1 is substituted for X2 and 1 is substituted for Y2;

in the case where N=1, and said flag F gives F=TRUE, X2>0, X1≠X2, and X2>1, after adding (X1, Y1) being contents of said first buffer to said packet mode list, X2 is substituted for X1 and Y2 is substituted for Y1 and thereafter 1 is substituted for X2 and 1 is substituted for Y2;

in the case where N=1 is given, and said flag F gives F=TRUE, X2>0, X1≠X2, and X2≤1, after adding (X1, Y1) being contents of said first buffer to said packet mode list, 0 is substituted for X2 and 0 is substituted for Y2 and thereafter 1 is substituted for X1, 2 is substituted for Y1 and FALSE is substituted for F;

in the case where N≥2 is given, and said flag F gives F=FALSE, (X1, Y1) being contents of said first buffer to said packet mode list, and in the case where N≥2 is given, and said flag F gives F=TRUE and X1=X2 is given, Y1 is replaced

with (Y+1) and thereafter (X1, Y1) being contents of said first buffer is added to said packet mode list;

in the case where N≥2 is given, and said flag F gives F=TRUE and X1≠X2 is given, (X1, Y1) being contents of said first buffer is added to said packet mode list, and moreover (X2, Y2) being contents of said second buffer is added to said packet mode list;

in the case where N≥2 is given, (0, N-1) is added to said packet mode list and 1.1, 0, 0, and False are substituted for X1, Y1, X2, Y2 and F, respectively;

lastly for each item (K, L) of said packet mode list, in case of K≥1, K units of said source packets are constructed as one unit of transmission packet data and L units of said transmission packet data including K units of said source packets are arranged in series; and

in case of K=0, with dummy data being said transmission packet, L units of said dummy data are arranged in series.

10. The packet mode determining method according to claim 9, wherein N=1, X1=1, and Y1=0 in case of initially received said source packet.

11. A packet mode determining method;

wherein upon receipt of a source packet of T units for one pair (T≥1) constructed of a pair of data of the source packet data and a source packet header including a time stamp,

in the case where J units (J≥1) of said source packets are in safekeeping in a shunting buffer, a pair of (0, N0-1) is added to a packet mode list only when the kept difference number N0 is N0>1, and thereafter for a first buffer expressed by a pair of two units of numeric values being (X1, Y1), J is substituted for X1 and 1 is substituted for Y1;

among M units of said source packets, all said source packets that have the same value as that in a predetermined portion of said time stamp of said source packet located in the last and that are brought into series with said source packet located in the last are stored into said shunting buffer;

the number of units of said source packets stored in said shunting buffer is substituted for J;

difference between said time stamp of said source packet of the last among said source packet that are not stored in said shunting buffer and said time stamp of said source packets that is stored in said shunting buffer is substituted for said kept difference number N0;

FALSE is substituted for a flag F expressed by TRUE or FALSE and M units of said source packets are checked sequentially from the head;

difference N between a value of said time stamp included in said source packet checked immediately prior thereto and

a value of said time stamp included in said source packet checked this time is calculated;

in the case where N=0 is given, and the flag F expressed by TRUE or FALSE gives F=TRUE, and a first buffer expressed by a pair of two units of numeric values being (X1, Y1) fulfills X1=1 and Y1>1, after Y1 is replaced with (Y1-1), (X1, Y1) being contents of said first buffer is added to a packet mode list, and moreover X1=2, Y1=1 are substituted for said first buffer;

in the case where N=0 is given, and said flag F is F=TRUE, and the first buffer expressed by a pair of two units of numeric values being (X1, Y1) is X1≠1 and/or Y1≤1, X1 is replaced with (X1+1);

in the case where N=0 is given, and said flag F is F=TRUE, X1 of the first buffer expressed by a pair of two units of numeric values of (X1, Y1) is replaced with (X1+1);

in the case where N=1, and said flag F is F=FALSE and X2≤1, 1 is substituted for X1 and Y1 is replaced with (Y1+1);

in the case where N=1, and said flag F is F=FALSE and X2>1, said flag F is made to constitute F=TRUE and, at the same time, 1 is substituted for X2 and Y2 is replaced with 1;

in the case where N=1, and said flag F is F=TRUE and X2=0, Y1 is replaced with (Y1+1) and, at the same time, 1 is substituted for X2;

in the case where N=1, and said flag F is F=TRUE and X2>0 and X1=X2, Y1 is replaced with (Y1+1) and, at the same time, 1 is substituted for X2 and 1 is substituted for Y2;

in the case where N=1, and said flag F gives F=TRUE, X2>0, X1≠X2, and X2>1, after adding (X1, Y1) being contents of said first buffer to said packet mode list, X2 is substituted for X1 and Y2 is substituted for Y1 and thereafter 1 is substituted for X2 and 1 is substituted for Y2;

in the case where N=1 is given, and said flag F gives F=TRUE, X2>0, X1≠X2, and X2≤1, after adding (X1, Y1) being contents of said first buffer to said packet mode list, 0 is substituted for X2 and 0 is substituted for Y2 and thereafter 1 is substituted for X1, 2 is substituted for Y1 and FALSE is substituted for F;

in the case where N≥2 is given, and said flag F gives F=FALSE, (X1, Y1) being contents of said first buffer to said packet mode list, (X1, Y1) being contents of said first buffer is added to said packet mode list;

in the case where N≥2 is given, and said flag F gives F=TRUE and X1=X2 is given, Y1 is replaced with (Y+1) and

thereafter; (X1, Y1) being contents of said first buffer is added to said packet mode list;

in the case where N≥2 is given, and said flag F gives F=TRUE and X1≠X2 is given, (X1, Y1) being contents of said first buffer is added to said packet mode list, and thereafter moreover (X2, Y2) being contents of said second buffer is added to said packet mode list;

in the case where N≥2 is given, after adding (0, N-1) to said packet mode list, 1, 1, 0, 0 and FALSE are substituted for X1, Y1, X2, Y2 and F, respectively; and

after checking on all (T-J) units of said source packets comes to an end,

in the case where said flag F is F=FALSE, (X1, Y1) being contents of said first buffer is added to said packet mode list;

in the case where said flag F gives F=TRUE and X1=X2, after Y1 is replaced with (Y+1), (X1, Y1) being contents of said first buffer is added to said packet mode list;

in the case where said flag F gives F=TRUE and X1≠X2, (X1, Y1) being contents of said first buffer is added to said packet mode list; and moreover (X2, Y2) being contents of said second buffer is added to said packet mode list;

lastly for each item (K, L) of said packet mode list, in case of K≥1, K units of said source packets are constructed

as one unit of transmission packet data and L units of said transmission packet data including K units of said source packets are arranged in series; and

in case of K=0, with dummy data being said transmission packet, L units of said dummy data are arranged in series.

12. The packet mode determining method according to claim 11, wherein N=1 and J=0 are given in case of initially received said source packet, and X1=0 and Y1=0 are given in case of said source packet located in the head amount T units of said source packets.

13. A packet mode determining method,

wherein upon receipt of a source packet constructed of a pair of data of the source packet data and a source packet header including a time stamp,

difference N between a value of said time stamp included in said source packet received immediately prior thereto and a value of the time stamp included in said source packet received this time is calculated;

in the case where said N gives N>(A+1), (N-A-1) units of dummy packets are outputted, and thereafter said source packet received this time is split into M units and outputted, and at the same time (M-1) is substituted for A; and

in the case where said N does not give N>(A+1), said source packet received this time is split into M units and outputted, and at the same time (M-N) is substituted for A.

14. The packet mode determining method according to claim 13, wherein N=1 and A=0 in case of initially received said source packet.

15. The packet mode determining method according to claim 13, wherein said M is a value designated in advance.

16. The packet mode determining method according to claim 14, wherein said M is a value designated in advance.

17. The packet mode determining method according to claim 13, wherein said M is received in a pair with said source packet.

18. The packet mode determining method according to claim 14, that said M is received in a pair with said source packet.

19. The packet mode determining method according to any of claims 13 to 18, wherein said M is 2, 4 or 8.

20. The packet mode determining method according to any of claims 9 to 18, wherein data of said source packet are an MPEG transport stream packet.

21. The packet mode determining method according to claim 20,

wherein said time stamp is expressed by Cycle_Count and Cycle_Offset of CycleTimeRegister of IEEE1394 standards; and

said difference N is difference between said Cycle_Counts.

22. A source packet generating apparatus, comprising:

packet generating means of generating a data packet transmitted in a first clock and determining transmission timing of said data packet expressed in said first clock; and

time information adding means of converting said transmission timing to time information on a time axis expressed in a second clock, adding to said data packet the time stamp with a value determined based on all or a part of said time information and outputting a data packet to which the time stamp is added as a source packet;

wherein outputted said source packet is converted into a packet for transmission based on the value of that added time stamp is outputted from an interface.

23. The source packet generating apparatus according to claim 22, wherein in the case where a predetermined data packet in said data packet is given as a first data packet and the data packet other than said first data packet in said data packet is given as a second data packet, said time information adding means determines a value of time stamp to be added to said second data packet based on a value subject to conversion into time difference in said second clock from

difference in said transmission timing in said first clock between said first data packet and said second data packet.

24. The source packet generating apparatus according to claim 23, wherein said time information adding means gives a value of time stamp to be added to said first data packet being 0, and

gives a value of time stamp to be added to said second data packet being a value subject to conversion into time difference in said second clock.

25. The source packet generating apparatus according to claim 23, wherein said time information adding means gives a value of time stamp to be added to said first data packet being a predetermined value, and

gives a value of time stamp to be added to said second data packet being a value subject to addition of said predetermined value subject to conversion into time difference in said second clock.

26. The source packet generating apparatus according to claim 23, wherein said predetermined data packet is a head data packet.

27. The source packet generating apparatus according to claim 22, wherein in the case where a data packet adjacent to a third data packet being a data packet with an already determined value of time stamp is given as a fourth data packet, said

time information adding means gives a value subject to addition of a value of said time stamp added to said third data packet to a value subject to conversion into time difference in said second clock from difference in said transmission timing in said first clock between said third data packet and said fourth data packet being a value of said time stamp to be added to fourth data packet.

28. The source packet generating apparatus according to claim 27, wherein said time information adding means gives a value of time stamp to be added to a head data packet in said data packet being a predetermined value.

29. The source packet generating apparatus according to any of claims 22 to 28, wherein a frequency of said first clock is 27 MHz, and

said data packet is an MPEG2 transport stream packet.

30. The source packet generating apparatus according to claim 29, wherein said packet generating means outputs said MPEG2 transport stream packet subject to addition of a dummy time stamp instead of outputting said MPEG2 transport stream packet to said time information adding means, and

said time information adding means replaces said dummy time stamp with the generated said time stamp.

31. The source packet generating apparatus according to claim 29, wherein said packet generating means receives an MPEG2

program stream packet and generates said MPEG2 transport stream packet from said MPEG2 program stream packet.

32. The source packet generating apparatus according to claim 30, wherein said packet generating means receives an MPEG2 program stream packet and generates said MPEG2 transport stream packet from said MPEG2 program stream packet.

33. The source packet generating apparatus according to claim 29, wherein a frequency of said second clock is approximately 24.576 MHz,

said time information is a value based on CycleTimeRegister in IEEE1394 standards; and

said time stamp is a time stamp described in a source packet header in IEC61883.

34. The source packet generating apparatus according to claim 22, wherein said "output" means "output outward".

35. The source packet generating apparatus according to claim 22, comprising buffer means of storing a data packet to which said time stamp is added as a source packet, wherein

said "output" means "write in said buffer", and

when a predetermined number of units of said source packets are written in, said buffer means

outputs said predetermined number of units of said source packets.

36. A program to cause a computer to function as a whole or a part of:

transmission packet generating means of investigating values of a predetermined portion of said time stamp included in said source packet when said source packet is inputted, unifying said source packets that have the same value for said predetermined portion and are inputted in series to output as one unit of transmission packet data, and

data outputting means of producing transmission packet by adding predetermined additional information to said outputted transmission packet data and outputting said produced transmission packet outward,

of the transmitting apparatus according to claim 1.

37. A program to cause a computer to function as a whole or a part of:

split number designating means of designating a split number M ($M \geq 1$) to split said source packet;

said transmission packet generating means of investigating values of a predetermined portion of said time stamp included in said source packet when said source packet is inputted,

outputting said M units split from said source packet as transmission packet data when difference between values of said predetermined portions of said time stamp included

in two source packets in series is N(N≥0) being N≤L(L≥1), and

outputting (N-L) units of dummy transmission packet data when difference between values of said predetermined portions of said time stamp is N being N>L; and

data outputting means of outputting as transmission packet outward those being said outputted transmission packet data and/or said dummy transmission packet data to which a predetermined additional information is added;

of the transmitting apparatus according to claim 3.

38. A program to cause a computer to function as a whole or a part of:

packet generating means of generating a data packet transmitted in a first clock and determining transmission timing of said data packet expressed in said first clock; and

time information adding means of converting said transmission timing to time information on a time axis expressed in a second clock, adding to said data packet the time stamp with a value determined based on all or a part of said time information and outputting a data packet to which the time stamp is added as a source packet;

of the source packet generating apparatus according to claim 22.

39. A medium, that can be processed by a computer, and that bears a program to cause the computer to function as a whole or a part of

transmission packet generating means of investigating values of a predetermined portion of said time stamp included in said source packet when said source packet is inputted, unifying said source packets that have the same value for said predetermined portion and are inputted in series to output as one unit of transmission packet data, and

data outputting means of producing transmission packet by adding predetermined additional information to said outputted transmission packet data and outputting said produced transmission packet outward,

of the transmitting apparatus according to claim 1.

40. A medium capable of being processed by a computer that bears a program to cause the computer to function as a whole or a part of

split number designating means of designate a split number M ($M \geq 1$) to split said source packet;

said transmission packet generating means of investigating values of a predetermined portion of said time stamp included in said source packet when said source packet is inputted,

outputting said M units split from said source packet as transmission packet data when difference between values of said predetermined portions of said time stamp included in two source packets in series is N(N≥O) being N≤L(L≥1), and

outputting (N-L) units of dummy transmission packet data when difference between values of said predetermined portions of said time stamp is N being N>L; and

data outputting means of outputting as transmission packet outward those being said outputted transmission packet data and/or said dummy transmission packet data to which a predetermined additional information is added,

of the transmitting apparatus according to claim 37 41. A medium capable of being processed by a computer that bears a program to cause the computer to function as a whole or a part of

packet generating means of generating a data packet transmitted in a first clock and determining transmission timing of said data packet expressed in said first clock; and

time information adding means of converting said transmission timing to time information on a time axis expressed in a second clock, adding to said data packet the time stamp with a value determined based on all or a part

of said time information and outputting a data packet to which the time stamp is added as a source packet;

of the source packet generating apparatus according to claim 22.

42. A program to cause a computer to execute all or a part of the steps, in the packet mode determining method according to claim 9 of:

upon receipt of a source packet constructed of a pair of data of the source packet data and a source packet header including a time stamp,

substituting FALSE for a flag F expressed by TRUE or FALSE, and at the same time, calculating difference N between a value of said time stamp included in said source packet received immediately prior thereto and a value of the time stamp included in said source packet received this time;

in the case where N=0 is given, and the flag F expressed by TRUE or FALSE gives F=TRUE, and a first buffer expressed by a pair of two units of numeric values being (X1, Y1) fulfills X1=1 and Y1>1, after Y1 is replaced with (Y1-1), adding (X1, Y1) being contents of said first buffer to a packet mode list, and moreover substituting X1=2, Y1=1 for said first buffer;

in the case where N=0 is given, and said flag F is F=TRUE, and the first buffer expressed by a pair of two units of numeric

values of (X1, Y1) is X1≠1 and/or Y1≤1, replacing X1 with (X1+1);

in the case where N=0 is given, and said flag F is F=TRUE, replacing X1 of the first buffer expressed by a pair of two units of numeric values (X1, Y1) with (X1+1);

in the case where N=1, and said flag F is F=FALSE and X2≤1, substituting 1 for X1 and replacing Y1 with (Y1+1);

in the case where N=1, and said flag F is F=FALSE and X2>1, making said flag F constitute F=TRUE and, at the same time, substituting 1 for X2 and 1 for Y2;

in the case where N=1, and said flag F is F=TRUE and X2=0, replacing Y1 with (Y1+1) and, at the same time, substituting 1 for X2;

in the case where N=1, and said flag F is F=TRUE and X2>0 and X1=X2, replacing Y1 with (Y1+1) and, at the same time, substituting 1 for X2 and 1 for Y2 respectively;

in the case where N=1, and said flag F gives F=TRUE, X2>0, X1≠X2, and X2>1, after adding (X1, Y1) being contents of said first buffer to said packet mode list, substituting X2 for X1 and Y2 for Y1 respectively and thereafter substituting 1 for X2 and 1 for Y2;

in the case where N=1 is given, and said flag F gives F=TRUE, X2>0, X1≠X2, and X2≤1, after adding (X1, Y1) being contents of said first buffer to said packet mode list,

substituting 0 for X2 and 0 for Y2 and thereafter substituting 1 for X1, 2 for Y1 and FALSE for F;

in the case where N≥2 is given, and said flag F gives F=FALSE, adding (X1, Y1) being contents of said first buffer to said packet mode list,

in the case where N≥2 is given, and said flag F gives F=TRUE and X1=X2 is given, replacing Y1 with (Y+1) and thereafter adding (X1, Y1) being contents of said first buffer to said packet mode list;

in the case where N≥2 is given, and said flag F gives F=TRUE and X1≠X2 is given, adding (X1, Y1) being contents of said first buffer to said packet mode list, and thereafter moreover adding (X2, Y2) being contents of said second buffer to said packet mode list;

in the case where N≥2 is given, adding (0, N-1) to said packet mode list and thereafter substituting 1 for X1, 1 for Y1, 0 for X2, 0 for Y2 and FALSE for F respectively;

lastly for each item (K, L) of said packet mode list, in case of K≥1, constructing K units of said source packets as one unit of transmission packet data and arranging in series L units of said transmission packet data including K units of said source packets; and

in case of K=0, with dummy data being said transmission packet, arranging in series L units of said dummy data.

43. A program to cause a computer to execute all or a part of the steps, in the packet mode determining method according to claim 11 of:

upon receipt of a source packet of T units for one pair ($T \geq 1$) constructed of a pair of data of the source packet data and a source packet header including a time stamp, of the packet mode determining method according to claim 11, all or a part of:

in the case where J units ($J \geq 1$) of said source packets are in safekeeping in a shunting buffer, adding a pair of (0, N0-1) to a packet mode list only when the kept difference number N0 is $N0 > 1$, and thereafter for a first buffer expressed by a pair of two units of numeric values being (X1, Y1), substituting J for X1 and 1 for Y1;

among M units of said source packets, storing into said shunting buffer all said source packets that have the same value as that in a predetermined portion of said time stamp of said source packet located in the last and that are brought into series with said source packet located in the last;

submitting the number of units of said source packets stored in said shunting buffer for J; and

after substituting, for said kept difference number N0, difference between said time stamp of said source packet of the last among said source packets that are not stored in

said shunting buffer and said time stamp of said source packet that is stored in said shunting buffer,

substituting FALSE for a flag F expressed by TRUE or FALSE and checking M units of said source packets sequentially from the head;

calculating difference N between a value of said time stamp included in said source packet checked immediately prior thereto and a value of said time stamp included in said source packet checked this time;

in the case where N=0 is given, and the flag F expressed by TRUE or FALSE gives F=TRUE, and a first buffer expressed by a pair of two units of numeric values being (X1, Y1) fulfills X1=1 and Y1>1, after Y1 is replaced with (Y1-1), adding (X1, Y1) being contents of said first buffer to a packet mode list, and moreover substituting X1=2, Y1=1 for said first buffer;

in the case where N=0 is given, and said flag F is F=TRUE, and the first buffer expressed by a pair of two units of numeric values of (X1, Y1) is $X1 \neq 1$ and/or $Y1 \leq 1$, replacing X1 with (X1+1);

in the case where N=0 is given, and said flag F is F=TRUE, replacing X1 of the first buffer expressed by a pair of two units of numeric values of (X1, Y1) with (X1+1);

in the case where N=1, and said flag F is F=FALSE and $X2 \leq 1$, substituting 1 for X1 and replacing Y1 with (Y1+1);

in the case where N=1, and said flag F is F=FALSE and X2>1, making said flag F constitute F=TRUE, and at the same time, substituting 1 for X2 and replacing Y2 with 1;

in the case where N=1, and said flag F is F=TRUE and X2=0, replacing Y1 with (Y1+1), and at the same time, substituting 1 for X2;

in the case where N=1, and said flag F is F=TRUE and X2>0 and X1=X2, replacing Y1 with (Y1+1), and at the same time, substituting 1 for X2 and 1 for Y2 respectively;

in the case where N=1, and said flag F gives F=TRUE, X2>0, X1≠X2, and X2>1, after adding (X1, Y1) being contents of said first buffer to said packet mode list, substituting X2 for X1 and Y2 for Y1 respectively and thereafter substituting 1 for X2 and 1 for Y2;

in the case where N=1 is given, and said flag F gives F=TRUE, X2>0, X1≠X2, and X2≤1, after adding (X1, Y1) being contents of said first buffer to said packet mode list, substituting 0 for X2 and 0 for Y2 and thereafter substituting 1 for X1, 2 for Y1 and FALSE for F;

in the case where N≥2 is given, and said flag F gives F=FALSE, adding (X1, Y1) being contents of said first buffer to said packet mode list;

in the case where N≥2 is given, and said flag F gives F=TRUE and X1=X2 is given, replacing Y1 with (Y+1) and

thereafter adding (X1, Y1) being contents of said first buffer to said packet mode list;

in the case where N≥2 is given, and said flag F gives F=TRUE and X1≠X2 is given, adding (X1, Y1) being contents of said first buffer to said packet mode list, and thereafter moreover adding (X2, Y2) being contents of said second buffer to said packet mode list;

in the case where N≥2 is given, arranging to add (0, N−1) to said packet mode list and thereafter substituting 1 for X1, 1 for Y1, 0 for X2, 0 for Y2 and FALSE for F respectively; and

after checking on all (T−J) units of said source packets coming to an end;

in the case where said flag F is F=FALSE, a step to add (X1, Y1) being contents of said first buffer to said packet mode list;

in the case where said flag F gives F=TRUE and X1=X2, after Y1 is replaced with (Y1+1), adding (X1, Y1) being contents of said first buffer to said packet mode list;

in the case where said flag F gives F=TRUE and X1≠X2, adding (X1, Y1) being contents of said first buffer to said packet mode list, and moreover adding (X2, Y2) being contents of said second buffer to said packet mode list;

lastly for each item (K, L) of said packet mode list, in case of K≥1, constructing K units of said source packets as one unit of transmission packet data and arranging in series L units of said transmission packet data including K units of said source packets; and

in case of K=0, with dummy data being said transmission packet, arranging in series L units of said dummy data.

44. A program to cause a computer to execute all or a part of the steps, in the packet mode determining method according to claim 13, of:

upon receipt of a source packet constructed of a pair of data of the source packet data and a source packet header including a time stamp,

calculating difference N between a value of said time stamp included in said source packet received immediately prior thereto and a value of the time stamp included in said source packet received this time;

in the case where said N gives N>(A+1), outputting (N-A-1) units of dummy packets, and thereafter splitting said source packet received this time into M units and outputting them, and at the same time substituting (M-1) for A;

in the case where said N does not give N>(A+1), splitting said source packet received this time into M units and

outputting them, and at the same time substituting (M-N) for A.

45. A medium capable of being processed by a computer that bears a program to cause a computer to execute all or a part of the steps, in the packet mode determining method according to claim 9, of:

upon receipt of a source packet constructed of a pair of data of the source packet data and a source packet header including a time stamp,

substituting FALSE for a flag F expressed by TRUE or FALSE, and at the same time, calculating difference N between a value of said time stamp included in said source packet received immediately prior thereto and a value of the time stamp included in said source packet received this time;

in the case where N=0 is given, and the flag F expressed by TRUE or FALSE, gives F=TRUE, and a first buffer expressed by a pair of two units of numeric values being (X1, Y1) fulfills X1=1 and Y1>1, after Y1 is replaced with (Y1-1), adding (X1, Y1) being contents of said first buffer to a packet mode list, and moreover substituting X1=2, Y1=1 for said first buffer;

in the case where N=0 is given, and said flag F is F=TRUE, and the first buffer expressed by a pair of two units of numeric values of (X1, Y1) is $X1 \neq 1$ and/or $Y1 \leq 1$, replacing X1 with (X1+1);

in the case where N=0 is given, and said flag F is F=TRUE, replacing X1 of the first buffer expressed by a pair of two units of numeric values (X1, Y1) with (X1+1);

in the case where N=1, and said flag F is F=FALSE and X2≤1, substituting 1 for X1 and replacing Y1 with (Y1+1);

in the case where N=1, and said flag F is F=FALSE and X2>1, making said flag F constitute F=TRUE and, at the same time, substituting 1 for X2 and 1 for Y2;

in the case where N=1, and said flag F is F=TRUE and X2=0, replacing Y1 with (Y1+1) and, at the same time, substituting 1 for X2;

in the case where N=1, and said flag F is F=TRUE and X2>0 and X1=X2, replacing Y1 with (Y1+1) and, at the same time, substituting 1 for X2 and 1 for Y2 respectively;

in the case where N=1, and said flag F gives F=TRUE, X2>0, X1≠X2, and X2>1, after adding (X1, Y1) being contents of said first buffer to said packet mode list, substituting X2 for X1 and Y2 for Y1 respectively and thereafter substituting 1 for X2 and 1 for Y2;

in the case where N=1 is given, and said flag F gives F=TRUE, X2>0, X1≠X2, and X2≤1, after adding (X1, Y1) being contents of said first buffer to said packet mode list, substituting 0 for X2 and 0 for Y2 and thereafter substituting 1 for X1, 2 for Y1 and FALSE for F;

in the case where N≥2 is given, and said flag F gives F=FALSE, adding (X1, Y1) being contents of said first buffer to said packet mode list;

in the case where N≥2 is given, and said flag F gives F=TRUE and X1=X2 is given, replacing Y1 with (Y+1) and thereafter adding (X1, Y1) being contents of said first buffer to said packet mode list;

in the case where N≥2 is given, and said flag F gives F=TRUE and X1≠X2 is given, adding (X1, Y1) being contents of said first buffer to said packet mode list, and thereafter moreover adding (X2, Y2) being contents of said second buffer to said packet mode list;

in the case where N≥2 is given, adding (0, N-1) to said packet mode list and thereafter substituting 1 for X1, 1 for Y1, 0 for X2, 0 for Y2 and FALSE for F respectively;

lastly for each item (K, L) of said packet mode list, in case of K≥1, constructing K units of said source packets as one unit of transmission packet data and arranging in series L units of said transmission packet data including K units of said source packets; and

in case of K=0, with dummy data being said transmission packet, arranging in series L units of said dummy data.

46. A medium capable of being processed by a computer that bears a program to cause a computer to execute all or a part

of the steps, in the packet mode determining method according to claim 11 of: upon receipt of a source packet of T units for one pair ($T \geq 1$) constructed of a pair of data of the source packet data and a source packet header including a time stamp,

in the case where J units ($J \geq 1$) of said source packets are in safekeeping in a shunting buffer, adding a pair of (0, N0-1) to a packet mode list only when the kept difference number N0 is $N0 > 1$, and thereafter for a first buffer expressed by a pair of two units of numeric values being (X1, Y1), substituting J for X1 and 1 for Y1;

among M units of said source packets, storing into said shunting buffer all said source packets that have the same value as that in a predetermined portion of said time stamp of said source packet located in the last and that are brought into series with said source packet located in the last;

substituting the number of units of said source packets stored in said shunting buffer for J;

after substituting, for said kept difference number N0, difference between said time stamp of said source packet of the last among said source packets that are not stored in said shunting buffer and said time stamp of said source packet that is stored in said shunting buffer;

substituting FALSE for a flag F expressed by TRUE or FALSE and checking M units of said source packets sequentially from the head;

calculating difference N between a value of said time stamp included in said source packet checked immediately prior thereto and a value of said time stamp included in said source packet checked this time;

in the case where N=0 is given, and the flag F expressed by TRUE or FALSE gives F=TRUE, and a first buffer expressed by a pair of two units of numeric values being (X1, Y1) fulfills X1=1 and Y1>1, after Y1 is replaced with (Y1-1), adding (X1, Y1) being contents of said first buffer to a packet mode list, and moreover substitute X1=2, Y1=1 for said first buffer;

in the case where N=0 is given, and said flag F is F=TRUE, and the first buffer expressed by a pair of two units of numeric values of (X1, Y1) is $X1 \neq 1$ and/or $Y1 \leq 1$, replacing X1 with (X1+1);

in the case where N=0 is given, and said flag F is F=TRUE, replacing X1 of the first buffer expressed by a pair of two units of numeric values of (X1, Y1) with (X1+1);

in the case where N=1, and said flag F is F=FALSE and $X2 \leq 1$, substituting 1 for X1 and replacing Y1 with (Y1+1);

in the case where N=1, and said flag F is F=FALSE and X2>1, a step to make said flag F constitute F=TRUE and, at the same time, substituting 1 for X2 and 1 for Y2;

in the case where N=1, and said flag F is F=TRUE and X2=0, replacing Y1 with (Y1+1) and, at the same time, substituting 1 for X2;

in the case where N=1, and said flag F is F=TRUE and X2>0 and X1=X2, replacing Y1 with (Y1+1) and, at the same time, substituting 1 for X2 and 1 for Y2 respectively;

in the case where N=1, and said flag F gives F=TRUE, X2>0, X1≠X2, and X2>1, after adding (X1, Y1) being contents of said first buffer to said packet mode list, substituting X2 for X1 and Y2 for Y1 respectively and thereafter substituting 1 for X2 and 1 for Y2;

in the case where N=1 is given, and said flag F gives F=TRUE, X2>0, X1≠X2, and X2≤1, after adding (X1, Y1) being contents of said first buffer to said packet mode list, substituting 0 for X2 and 0 for Y2 and thereafter substituting 1 for X1, 2 for Y1 and FALSE for F;

in the case where N≥2 is given, and said flag F gives F=FALSE, (X1, Y1) being contents of said first buffer to said packet mode list, adding (X1, Y1) being contents of said first buffer to said packet mode list;

in the case where N≥2 is given, and said flag F gives F=TRUE and X1=X2 is given, replacing Y1 with (Y+1) and thereafter adding (X1, Y1) being contents of said first buffer to said packet mode list;

in the case where N≥2 is given, and said flag F gives F=TRUE and X1≠X2 is given, adding (X1, Y1) being contents of said first buffer to said packet mode list, and thereafter moreover adding (X2, Y2) being contents of said second buffer to said packet mode list;

in the case where N≥2 is given, arranging to add (0, N-1) to said packet mode list and thereafter substituting 1 for X1, 1 for Y1, 0 for X2, 0 for Y2 and FALSE for F respectively; and

after checking on all (T-J) units of said source packets coming to an end,

in the case where said flag F is F=FALSE, adding (X1, Y1) being contents of said first buffer to said packet mode list;

in the case where said flag F gives F=TRUE and X1=X2, after Y1 is replaced with (Y1+1), adding (X1, Y1) being contents of said first buffer to said packet mode list;

in the case where said flag F gives F=TRUE and X1≠X2, adding (X1, Y1) being contents of said first buffer to said

packet mode list, and moreover adding (X2, Y2) being contents of said second buffer to said packet mode list;

lastly for each item (K, L) of said packet mode list, in case of K≥1, constructing K units of said source packets as one unit of transmission packet data and arranging in series L units of said transmission packet data including K units of said source packets; and

in case of K=0, with dummy data being said transmission packet, arranging in series L units of said dummy data.

47. A medium capable of being processed by a computer that bears a program to cause a computer to execute all or a part of the steps, in the packet mode determining method according to claim 13, of:

upon in receipt of a source packet constructed of a pair of data of the source packet data and a source packet header including a time stamp,

calculating difference N between a value of said time stamp included in said source packet received immediately prior thereto and a value of the time stamp included in said source packet received this time;

in the case where said N gives N>(A+1), outputting (N-A-1) units of dummy packets, and thereafter splitting said source packet received this time into M units and outputting them, and at the same time substituting (M-1) for A;

in the case where said N does not give N>(A+1), splitting said source packet received this time into M units and outputting them, and at the same time substituting (M-N) for A.

48. A transmitting method for transmitting a source packet constructed of a pair of data of a source packet data and a source packet header including a time stamp, comprising:

a step of investigating values of a predetermined portion of said time stamp included in said source packet when said source packet is inputted, unifying said source packets that have a same value for said predetermined portion and are inputted in series to output as one unit of transmission packet data; and

a step of producing a transmission packet by adding predetermined additional information to said outputted transmission packet data and outputting said produced transmission packet outward.

49. A transmitting method for transmitting a source packet constructed of a pair of data of the source packet data and a source packet header including a time stamp, comprising:

a step of split number designating means of designating a split number M (M≥1) to split said source packet;

a step of investigating values of a predetermined portion of said time stamp included in said source packet when said source packet is inputted,

outputting said M units split from said source packet as transmission packet data when difference between values of predetermined portions of said time stamp included in said two source packets in series is N(N≥0) being N≤L(L≥1), and

outputting (N-L) units of dummy transmission packet data when difference between values of said predetermined portions of said time stamp is N being N>L; and

a step of outputting as transmission packet outward those being said outputted transmission packet data and/or said dummy transmission packet data to which a predetermined additional information is added.

50. A source packet generating method, comprising:

a step of generationg a data packet transmitted in a first clock, and determining transmission timing of said data packet expressed in said first clock; and

a step of converting said transmission timing to time information on a time axis expressed in a second clock, adding to said data packet the time stamp with a value determined based on all or a part of said time information and outputting a data packet to which the time stamp is added as a source packet;

wherein outputted said source packet is converted into a packet for transmission based on the value of that added time stamp is outputted from an interface.